New Terror to Evildoers Is That Scientific Eavesdropper, the Dictograph

Use of Tiny Mechanical Detective Contrivance for the Recording of Supposed Secret Conversations Between Suspected Parties in Famous Dynamiting and Bribery Cases Has Brought About a State of Mind Among Malefactors That Will Lead to a Careful Examination of All Furnishings and Attachments in Their Meeting Places.

HAVE you been dictographed?

The scientific eavesdropper, unknown six months ago, has come into sensational prominence as the means of undoing dynamiters, legislative bribe takers and crooks of high and low degree from 'Frisco to New York. It has tapped the secrets of prison cells, revealed conspiracies in hotel rooms and offices, proclaimed in loud tones the whispered words of cunning malefactors. Under sofa and chair, behind desk and beside window, this tiny eavesdropper and ultra modern ear of Dionysius has played its part and struck terror into scores of criminal bosoms. What use to lock doors and lower voices, when the dictograph, concealed in furniture or wall, may reproduce the faintest sound to distant listeners?

The latest use reported of this infernal machine was in the office of President Ryan of the iron workers' union at Indianapolis, where it had been attached to a desk since last October. It is said a dictograph was concealed in the office of the McNamaras' legal defenders at Los Angeles. It was employed in McManigal's cell, in the Columbus, Ohio, bribery case, the Lorimer case and at Gary, Ind. It is working now on a number of matters that will soon provide the public with sensations.

W. J. Burns was regarded as a wizard, a super-Sherlock Holmes, before his employment of the dictograph became known. His acumen as a detective is not lessened by the fact that he was the first hereabouts to see the immense possibilities of the machine in detective work and that he has used it right along, even after his "subjects" became aware of its existence. Burns is so much attached to the dictograph that he always carries one around with him in his pocket. He may not carry a pistol or a pair of handcuffs, like the classical detective, but he always has a dictograph—the great confessional instrument of modern times, which might otherwise be called the automatic "third degree."

The Tribune writer wanted to find out all about it, so he went to see the inventor and maker of the dictograph, K. M. Turner. It was in a Broadway office building within the theatrical district that Mr. Turner was found. His factory is out on Long Island, but he had plenty of instruments in his office to demonstrate with. He is a stocky man who resembles Thomas A. Edison—the Edison of twenty years ago. He has the big brow and the dreamy, farseeing eyes and the frank, homely style of the inventor who cares more for an idea than for a dollar. He smokes cigars and pipes. In the drawers of his desk is a large collection of old pipes and old models of dictograph sound collectors. For an hour he talked and demonstrated and discussed general scientific theories in connection with his invention.

Mr. Turner is the inventor of the acousticon, the interior telephone and the dictograph. The acousticon has been used for some years in churches and theatres to enable the deaf to hear. All these devices are nearly related. They might be called merely superlative telephones. They magnify sound and transmit it over a wire. The so-called microphone is a sound magnifier for laboratory use; it makes the scraping of a fly's legs audible to human ears. To use the ordinary telephone one must be close to the mouthpiece; with the Turner telephones it is sufficient to speak within a dozen feet or more of the transmitting disk.

It was an eerie experience to stand in a corner of Mr. Turner's office, far from a small wooden box which was covered with a heavy overcoat, and whisper: "Do you hear me?" and receive a distinct, full-toned answer emanating from the box, the voice of some one in another part of the building:

"Yes, of course, I hear you."

The investigator whispered still lower:

"One, two, three, four, five. Did you get that?"

The distant voice replied:

"One, two, three, four, five."

The writer stood close against the box receiver. The invisible one's voice reported that there was a queer rustling sound. This sound may have been the rustling of clothes caused by breathing.

A mutual test with Mr. Turner on the possibility of hearing heart beats did not turn out well. The throbbing of the heart does not cause air vibration, or sound, which is readily appreciable by telephonic means.

The small box is part of the commercial dictograph, or Turner interior telephone. It consists principally of the transmitting disk, or sound collector, which is the same as that of the detective dictograph, and an orifice which "talks back" the answer of the person at the other end of the wire. There are half a dozen or more pegs, which may be depressed to put the user in touch with as many instruments in adjoining offices. It is simply an independent interior telephone for use in offices, obviating the need of a switchboard, preventing switchboard "leaks" and requiring no manipulation of transmitter or receiver. If you wish to talk to any one within the circuit, pull down a peg and talk away as if you were in the same room with the other person. You can thus dictate to a stenographer or hold a business conference with half a dozen persons simultaneously. An apparatus of this sort with seventy-two pegs and as many connections is being made for a public school on the Pacific Coast.

The detective dictograph is an adaptation of the interior telephone for detective work. The whole affair weighs half a pound, and can be easily slipped into a coat pocket. When it is incased in a black leather box it looks like a small pocket camera. There is a sound collector, or transmitter, a receiving disk, a couple of small dry batteries and a double length of black, silk-covered wire. The sound collector is a disk of black, hard rubber weighing a few ounces, about three inches across and an inch thick. There is a metal eye by which it may be hung on a nail behind a desk or a picture. The wires are inserted at the lower end of the disk, and at their terminus are connected with the receiving disk, which the eavesdropper holds to his ear. The dry batteries provide the necessary current. Unlike the interior telephone, the dictograph does not provide for a chat between two persons. The detective or stenographer at the end of the line naturally doesn't care to "talk back" to the subject.

On the outer extremity of the sound-collecting disk is a series of oblong, semi-circular openings through which the vibrations of air which constitute sound pass within. Inside there is a cone, the point of which is an electrode and which reaches the centre of the disk. Vibrations of air striking the bottom of the cone are reflected back and forth. They climb a circular mountain, as it were, and become focussed at the centre and peak of the cone. It is something like a burning glass focussing the rays of light on a central point. The disk gathers the sound vibrations within a circle about nine and one-half inches in circumference and transforms them into electrical impulses to be sent over a wire.

It is a great mechanical ear, which assimilates the least whisper and reproduces it to the human ear at the other end of the circuit.

A hundred shapes and sizes of the mechanical ear were tried out before perfection was reached. The discard collection in Mr. Turner's desk shows disks as big as saucers, with varied openings, and all kinds of metal and other construction. It was found that the bigger the ear the better the hearing wasn't so, and that a fallacy lurked in the saying that little pitchers have large aural cavities.

The dictograph ear multiplies sound. It is interesting to know how much it multiplies, but the question can hardly be answered, since there is no standard for sound volume. The pitch of a sound can be scientifically fixed, while the intensity is difficult to determine. Some have estimated that the dictograph multiplies four hundred times, an estimate which seems quite generous.

Down at Washington Mr. Turner connected the dictograph with the government wireless outfit, and it was figured that he brought ships at sea two hundred miles nearer. Wireless signals from the Gulf of Mexico, which had been barely audible, were heard all over a large room when the Turner apparatus was applied. The same apparatus made the President in the White House hear everything in the House of Representatives just as if he had been there. More lately President Hadley of Yale made an after-dinner speech at his New Haven home, which was well heard by Yale alumni at Chicago. In the latter case a trumpet disseminated the far-borne voice to the banqueters.

Mr. Turner had a difficult time getting any one to take his ear machines seriously for detective purposes. At the Thaw trial his suggestions were turned down by an assistant district attorney. Then he crossed the pond and showed a form of his invention to the late King Edward, who said, "Scotland Yard should have it." The police of Paris and other cities took up the dictograph before any one in this country showed much interest in it. The European crime hunters used it and kept mum. There are no noisy newspaper men over there to tell about such things. It is said that the Secret Service was the first to get wise to the dictograph in this country, and a bright, red-haired man, called "Billy" Burns, began to dabble with the machine.

The first published instance of its use was in the Illinois Central shop grafting case about a year ago. Burns had such success with it that he tried it on the McNamara dynamiters, and has been trying it on almost everybody since. The legislative grafters at Columbus, Ohio, were much disgusted by the apparatus last summer, and the common people of that town celebrated the revelations by joyously drinking dictograph cocktails. Mr. Turner went out there to testify and demonstrate that the dictograph was not a fantasy bred of cocktails, and that it could provide perfectly good legal evidence. The Ohio Supreme Court has upheld the dictograph as a legal evidence getter.

Despite the publicity it has had the more the machine is used the better it works. Most people refuse to believe in it until they have been sent to jail by its agency, and then they have their doubts. So it is that Mr. Burns has been dictographing away on all kinds of cases for months past, and will probably keep at it as long as he is on the job. After all, men must talk, and the dictograph must listen. You can't see it, you can't find it. It may be imbedded in the stone wall of a cell, hidden under wall paper or concealed in a ventilator. Two Italian crooks were placed in a Pennsylvania jail cell. A dictograph operator waited for them to talk. They said nothing for five days, but on the sixth they began to talk, and it was all taken down stenographically.

Here are a few terse observations on the detective uses of the dictograph:

"The only sane method of obtaining evidence in bribery, divorce and in all cases where the words of the accused person may be used as evidence against them. Invaluable to government, state and city officials. . . . In bribery or boodling cases, the hotel room or office may be equipped in a moment's time. After arrest in criminal cases, don't separate the prisoners; place them all in one cell. Let them talk; they will do it. But be sure you are at the other end of the dictograph, and take down what they say, after which, separate them and confront them with their story. You will get a full confession every time.

"In confessions, do not have a third party in the room. Take your man in alone with you. Talk to him; gain his confidence and get him to tell you just how it happened. Only you two are there, and he will express himself fully and freely. The dictograph will give you the story complete through your stenographer, and the evidence will stand in court. It always does.

"This is an age of progress and improvement. Why use antiquated methods in securing evidence? The dictograph method is the new and up-to-date method. It is the scientific way.

"Corporations may have their meeting room walls fitted with dictograph ears.

"The dictograph is applicable to all lines of business and all professions. Its value cannot be estimated in dollars alone, as its moral influence is untold."

Along the line of moral influence, Mr. Turner said he could tell an interesting dictograph story, but it would violate a confidence. In the right hands the instrument has a moral effect, but it may be, and in a few cases has been, turned to immoral and pernicious uses, for example, wire tapping and blackmail, not to mention other crimes. For this reason it is not sold or rented to irresponsible parties. It has been vainly asked for by men who would not give their names and who were presumably crooks, or persons with an immoral design. The instrument is supplied to accredited detective agencies and government officials. An honest business man or a respectable corporation can have it. It is sold for $150 or rented for $50 a year. A mechanic will install it, but any intelligent person can do that himself.

The only apparent flaw in the dictograph method is the reliance upon a stenographer who reports the conversation at the other end of the wire. In the Lorimer case, and more recently the Gary, Ind., case, doubt has been cast on the accuracy of the stenographic reports. A stenographer, Meyer Himmelblau, made an affidavit that the dictograph records in the Gary case were faked. While it is possible to have two stenographers simultaneously on the job, thus strengthening the record by the testimony and mutual corroboration of two persons, an ideal condition would make the instrument independent of human fallibility. Attempts have been made to hitch the dictograph to the dictaphone, or phonograph, so that a perfect mechanical record of conversations might be automatically made. So far these attempts have not succeeded. The phonograph cylinder will not take the imprint of a voice coming over a wire. Nor is it sufficiently affected by the vibrations in wireless telephony, as was shown in a recent experiment.

The longest distance over which a dictograph has been used in detective work is three miles. This was in a Western case. A regular copper telephone wire was employed for the purpose. There is hardly any practical distance limit, but an exclusive wire is necessary to avoid interruptions. The apparatus may be attached to any telephone wire and thus constitute merely an improvement on ordinary telephonic service. However, the telephone companies prohibit the use of devices which they do not supply to subscribers.

Besides its use by the Burns agency, the Pinkertons, the Secret Service, the Department of Justice, the Army and Navy departments and New York Police Headquarters, the dictograph is installed in the offices of the National City Bank, the Standard Oil Company, in railroad offices and in many Wall street establishments. If the usual business instrument is of the interior telephone type, it is hardly more conspicuous than the detective type and can be easily concealed within a desk. In one instance an officer of a corporation wanted to know the secrets of a room which had solid walls and no furniture except a desk in the centre, over which hung a chandelier. There was a metal ball at the base of the chandelier. In this ball a dictograph sound collector was rigged, whereby the corporation official at the other end of the wire heard everything that was said in that room. A banker has the instrument hidden in a clock on his desk, and when he wants the conversation of his caller recorded he presses a button on the floor with his foot to notify a stenographer in the next room.

Such more or less moral and legitimate business uses of the dictograph contrast with its recent application in Salt Lake City by a gang of wire tappers, who magnified the sound of telegraphic messages relating to the stock market and would have got rich if they had not gone to jail.

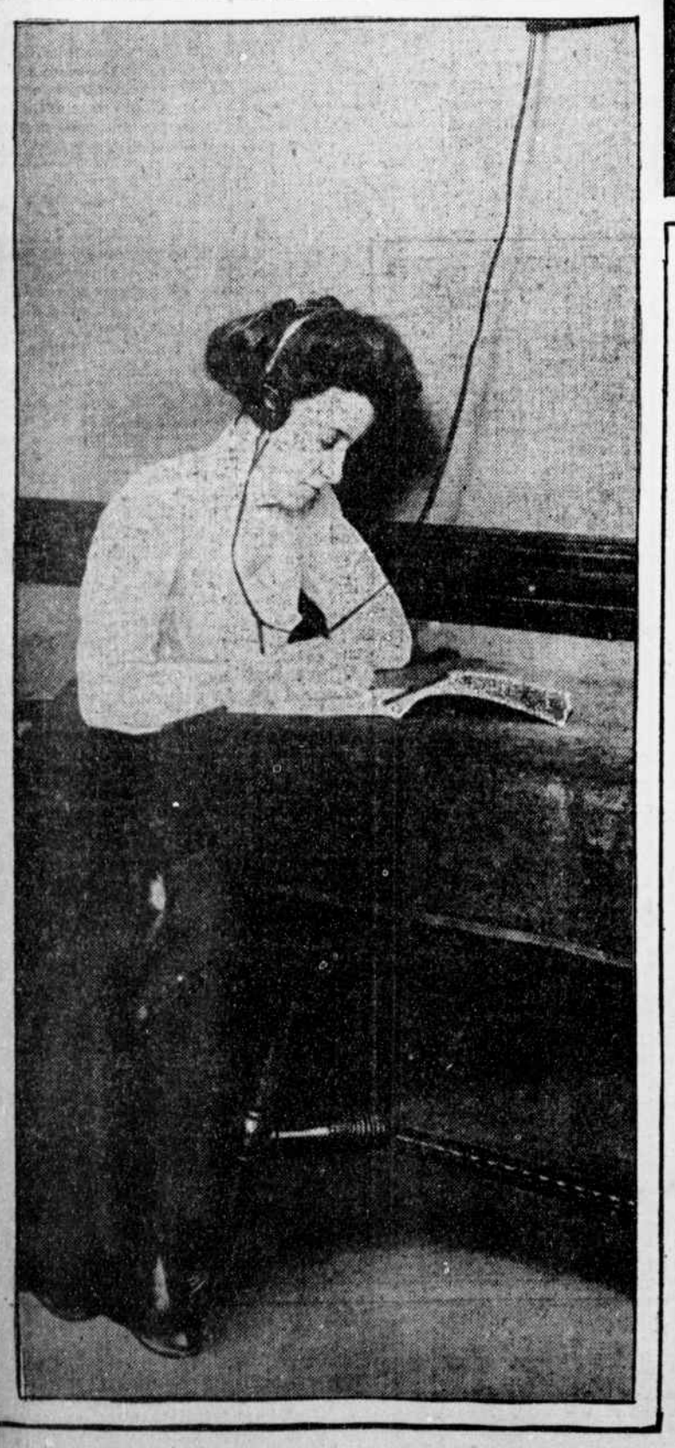
There are a multitude of uncultivated fields for the instrument. In the psycopathic ward at Bellevue it would be extremely useful to have a record of the speech or mutterings of suspected lunatics when they are alone. A nurse attending a patient might go to sleep in an adjoining room with a receiver attached to her head and she would instantly awaken at the least whisper or noise made by the patient. Another could use the same apparatus for a sick child. For apartment houses the device would supersede telephone and speaking tube. Its sanitary superiority to any instrument with a mouthpiece is obvious.

Science is beginning to make important use of the dictograph. Professor Frank Perret, the American volcano expert, has been studying Vesuvius by connecting the active fissures of the crater dictographically with his cottage on the slope of the mountain. He has attached the receiver to his head when going to bed at night, and has been enabled to hear every rumble of his volcanic pet throughout the night.

THE MECHANICAL EAR WHICA HEARS EVERYTHING

THE COMMERCIAL DICTOGRAPA IN CENTRE OF DESK.

K.M. TURNER INVENTOR OF THE DICTOGRAPA



RECORDING CONVERSATION TRANSMITTED BY MEANS OF DICTOGRAPH.

HOW A DICTOGRAPH MAY BE HIDDEN TO TRANSMIT CONVERSATION.

Using Huge Nets to Entrap Porpoises

Continued from third page.

off his feet in imminent peril of other blows or cripple him outright. The surfmen have become so expert, however, that they are seldom even grazed, but unflagging vigilance and alertness are needful.

The work is really akin to sport, even though a matter of commercial pursuit, and the odds are a long way from being against the fighting mammals. It takes courage and strength and no little skill to battle to success with those stranded porpoises, and among the surfmen there are plenty of tired muscles and panting lungs ere the capture be complete. The greased pig of tradition is an easy mark beside these slippery, agile, powerful, wriggling "seahogs," as "Jacky" is pleased to term them.

There are times when the sea and the surf conspire to protect the porpoises from capture. The fishermen are not always successful in getting their boats launched through the breakers, and more than once in a season's work the men get a nasty spill. Sometimes, too, the nets are carried away, and, again, the force of the oncoming swells makes it hard to work in unison, and occasionally—even though the boats get seaward through the breakers—it is impossible to unite the various sections of the seine, and the alert quarry get by and away. These are the chances and the risks that must be run in the pursuit of these fish, and all of us have heard something of the hazards that lurk in the waters neighboring fateful Cape Hatteras.

At each fishing station there is a crude outfit for speedily trying out the fat from the porpoises. The head is promptly severed from the body, and the yield from each of these two parts is tried out independently. The fat is stripped from the fish and minced, and then put in try-pots and slowly simmered, the oil rising and the fibre settling. At this stage the body oil and the jaw oil are nearly alike in general appearance, but there is a wide difference between their commercial values. The blubber oil is worth about 35 or 40 cents a gallon, while the jaw oil sells for $10 a gallon. It is easy to see what a premium is placed upon the fraudulent mixing of the two products and the sale of the mixture as pure jaw oil. Tricks of this sort have been responsible for watches and clocks going wrong—the unscientific refiner failing to make sure of the character of his raw material, so to speak.

After the oil is tried out from the fat at the fishing stations it is promptly shipped to the refining plant at New Bedford. When it arrives there the first step in the succeeding treatment consists in gently heating it to complete the process of cooking begun by the fishermen. Next the oil is placed in tanks to await grading, and it is said that two years may frequently elapse before the trained eye of a skilled refiner can determine to what class the oil belongs. This cunning of discrimination is instinctive or a second nature, developed by intimate familiarity with porpoise oils, and we are told that there are not a half dozen men in the world who have had the training and experience necessary for this work. Extremely delicate variations in color, texture, odor and flavor enter into the classifying of the different grades, and upon these distinctions a very large part of the subsequent reliability of watch and chronometer lubricants rests.

Again, each grade of oil calls for individual treatment, and, quite reasonably, the refiner is not telling the secrets of his art, nor will he dwell upon the details by which he patiently gets rid of all foreign material which may impair the lubricating qualities of his finished article. However, nature helps him in his long work, which covers two years, during which time the oil lies undisturbed and undergoes a self-settling process. After that it must be subjected to intense refrigeration, and once more nature helps, the oil spending a winter far enough north to expose it to the required cold, during which there is a further precipitation, which leaves an oil which will not congeal, despite the rigors of Jack Frost.

Not until all of these stages have been successfully passed is porpoise jaw oil set to be placed in its little bottles and offered to the makers of watches and clocks and chronometers. By that time its value has been immensely increased, but we must remember that precious little of it is required for each of these forms of timepiece, and, when good, the oil should be equal to the office expected of it for a year or two, and under all climatic conditions, at that.